



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,483	11/20/2003	Tianyi Liao	LP5265USNA	8432
23416	7590	08/10/2005	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			MUROMOTO JR, ROBERT H	
			ART UNIT	PAPER NUMBER

3765

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

TTC

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/718,483	LIAO, TIANYI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Robert H. Muromoto, Jr.	3765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/8/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent P2000-350665 ('665 herein).

'665 teaches a woven fabric comprising 20-90 % (fabric by weight basis) of bicomponent fibers made of two polyester based polymers bonded side-by-side in the lengthwise direction of the fiber, wherein one of the components is a polyester that consists primarily of PTT.

The polyester based bicomponent fibers are used in at least the warp yarns or the filling yarns of the woven fabric.

The preferred low shrinkage component of the bicomponent fiber is PET capable of being formed into fibers.

The preferred method of blending the component fibers and plant-based fibers is to weave separately the two fibers (bicomponent and natural) into the fabric. It is preferable for the two fibers to be woven in alternation as the warp yarns.

Specific examples of plant fibers used are cotton and linen. Both cotton and linen are only available as staple spun yarns.

The fabric is advantageous in a plain weave or a rib (twill) weave design.

The range in '665, 20-90% by fabric weight of bicomponent fibers is clearly within the range "about 13-28%" recited in claim 8 and the range "about 19%" recited in claim 9.

'665 teaches essentially all of the limitations of the claims listed above. '665 does not specifically teach the range of bicomponent yarns by weight with respect to the warp yarns (claim 1 and 2) nor the after-heat-set crimp contraction value range (claim 1).

However, the percentage of bicomponent yarns by weight of the warp yarns is a variable that is absent any criticality or unexpected results in the instant specification. The bicomponent yarn is taught in '665 to provide the stretch characteristic to the fabric. One of ordinary skill in the art at the time of invention could determine through routine experimentation the amount of bicomponent fiber per weight of the total warp to provide the optimum stretch characteristics to a fabric for a given end application.

With respect to the recited after-heat-set crimp contraction value range, this value is a measured property of the resulting fabric. Since '665 teaches all of the structural limitations of the instant invention, it follows that the resulting fabric would also have the same range of after-heat-set crimp contraction. Therefore it would have been obvious to produce a stretch fabric from bicomponent PTT and PET fibers, woven with staple spun fibers that results in a fabric with the recited after-heat-set crimp contraction ranges.

Claims 5 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over '665 as applied to claims listed above, and further in view of US patent 6,705,353.

Although '665 teaches all of the limitations of the claims above, '665 does not teach pick and pick, or co-insertion, weft insertion methods nor does '665 teach the warp pattern to be 'most uniform' for the weight percentage of bicomponent fibers present.

However, '353 does teach a woven stretch fabric that uses mixed weaving of PTT bicomponent fibers with other types of fibers. The mixed weaving used in '353 teaches yarn feeding in either the warp or the weft in one, two or three yarn increments (col. 8, lines 51-68). Pick and pick insertion corresponds to one yarn while co-insertion corresponds to the feeding of two yarns at a time. It can also be said that the use of differing weft insertion methods are widely known and commonly practiced throughout the art of woven fabric manufacture and one of ordinary skill in the art could determine through routine experimentation the optimum weft insertion for the desired end product.

'353 also teaches the "use of one of the above yarns as a warp or weft yarn, or alternate feeding of the one yarn is preferred for the purpose of obtaining a woven fabric having a less unpreferably shaped surface (col. 8 lines 55-68)." The recitations in claim 7 are taught by this citation from '353. The 'most uniform' pattern is considered to be equivalent to obtaining a fabric having the "least unpreferably shaped surface" taught by '353.

Therefore it would have been obvious to one of ordinary skill in the art to modify the warp pattern of a stretch fabric in the most uniform pattern with respect to the high stretch bicomponent yarn present to produce a fabric with the least unpreferably shaped surface.

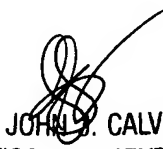
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert H. Muromoto, Jr. whose telephone number is 571-272-4991. The examiner can normally be reached on 8-530, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Calvert can be reached on 703-305-1025. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bhm  
August 2, 2005

  
JOHN L. CALVERT  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700